

PATENT CLAIMS

1. Illumination device consisting of at least one electrical panel lamp module (1; 1a, 1b, 1c) with a module housing (10), whose housing depth is small compared with the light-emitting front side (20) of the panel lamp module (1; 1a, 1b, 1c),

characterised in that

the module housing (10) consists of a lamp frame (3; 3a-3d) and at least one lamp housing (2; 2a-2e) which can be inserted in the lamp frame (3; 3a-3d).

2. Illumination device according to claim 1, **characterised in that** the lamp frame (3; 3a-3d) has means (30; 31, 52) for mechanically connecting the lamp frame (3; 3a-3d) to the lamp frame (3; 3a-3d) of at least a further panel lamp module (1; 1a, 1b, 1c).
3. Illumination device according to claim 1 or 2, **characterised in that** the lamp frame (3; 3a-3d) has a greater depth than the lamp housing (2; 2a-2e).
4. Illumination device according to at least one of the preceding claims, **characterised in that** the lamp housings (2a-2d) can be inserted side by side or one above the other in a lamp frame (3c).
5. Illumination device according to claim 4, **characterised in that** a preferably elastic connecting means can be inserted or injected into the connections of the lamp housings (2a-2d) to other lamp housings (2a-2d).

6. Illumination device according to at least one of the preceding claims, **characterised in that** a socket and connecting grid (4) can be inserted in the lamp frame (3d) to hold several lamp housings (2e) arranged side by side and one above the other.
7. Illumination device according to at least one of the preceding claims, **characterised in that** spacers (24), preferably designed as rubber buffers and whose outer ends project beyond the lamp frame (2), are arranged in the corner regions of the rear wall (21) of the lamp housing (2; 2a-2e) opposite the light-emitting front side (20).
8. Illumination device according to at least one of the preceding claims, **characterised in that** the lamp frame (3; 3a-3d) has assembly bores (30) which in order to connect with the lamp frame (3; 3a-3d) of the at least one further panel lamp module (1; 1a, 1b, 1c) are aligned with each other when the arms (31-34) of the lamp frames (3; 3a-3d) of the panel lamp modules (1; 1a, 1b, 1c) being connected to each other are aligned flush with each other.
9. Illumination device according to claim 8, **characterised in that** to mechanically connect the panel lamp modules (1; 1a, 1b, 1c) connecting elements (7) can be inserted through the aligned assembly bores (30) and can be connected together through positive and/or force locking engagement or can be brought into a locking position.
10. Illumination device according to claim 9, **characterised in that** the connecting elements consist of lateral connectors (7) with a cylindrical connecting body (70) whose diameter is smaller than the diameter of the assembly bores (30), a stop shoulder (71) mounted at one end of the cylindrical connecting body (70), a lever (73), and of a bolt (72) connected to the lever (73) and guided through the

cylindrical connecting body (70) wherein a groove (74) is formed between the end of the bolt and the end of the cylindrical connecting body (70) wherein the width of the groove can be changed by actuating the lever (73) and the groove contains an elastic ring (75) which can be expanded through compression.

11. Illumination device according to claim 9, **characterised in that** the connecting elements (7) consist of screws and nuts which can be screwed thereto.
12. Illumination device according to claim 9, **characterised in that** the connecting elements (7) consist of bayonet or dovetailed connections.
13. Illumination device according to at least one of the preceding claims, **characterised in that** the lamp housing (2) consists of a light housing (26) for holding a planar lamp, a heat distribution plate (25) on the rear side of the light housing (26) opposite the light-emitting front side of the lamp housing (2), and of a rear wall (21).
14. Illumination device according to at least one of the preceding claims, **characterised in that** on the rear wall (21) of the lamp housing (2) there is at least one contact element (41) and at least one contact receiver element (42) for controlling and supplying current to the panel lamp module (1; 1a, 1b, 1c).
15. Illumination device according to claim 14, **characterised in that** the rear wall (21) of the lamp housing (2) has a central raised region (22) and that the at least one contact element (41) and contact receiver element (42) are designed multi-polar and are arranged on an end side (23) of the raised region (22).

16. Illumination device according to claim 15, **characterised in that** the central raised region (22) is rectangular with a diagonal side (23) bridging one corner and that the at least one contact element (41) and contact receiver element (42) are arranged on the diagonal side (23).
17. Illumination device according to at least one of the preceding claims, **characterised in that** the panel lamp modules (1; 1a, 1b, 1c) are substantially identical in design and can be connected directly to each other mechanically and electrically through each two end sides (31-34) of the lamp frame (3).
18. Illumination device according to claim 17, **characterised in that** the electrical connection of the panel lamp modules (1; 1a, 1b, 1c) can be produced through contact elements (44, 45) arranged on at least two opposite arms (31-34) of the lamp frame (3) of the panel lamp modules (1; 1a, 1b, 1c).
19. Illumination device according to claim 17 or 18, **characterised in that** the mechanical connection of the panel lamp modules (1; 1a, 1b, 1c) can be produced through push-fit positive locking elements (51, 52) which are arranged on the connecting arms (31-34) of the lamp frame (3).
20. Illumination device according to at least one of the preceding claims 17 to 19, **characterised in that** the mechanical connection can be produced through the positive locking elements (16, 17) and force-locking engagement elements (15).
21. Illumination device according to at least one of the preceding claims 17 to 20, **characterised in that** the lamp frame (3) has in the region of at least one arm (31-34) a socket for connection with positive locking elements for the cascading of the panel lamp modules (1; 1a, 1b, 1c).

22. Illumination device according to claim 21, **characterised in that** the socket comprises a recess for connection to a positive locking connecting element which connects two aligned sockets of two lamp frames (3) together.
23. Illumination device according to at least one of the preceding claims, **characterised in that** the panel lamp modules (1, 1a, 1b, 1c) can be connected to a power supply module through cable connections (80-82).
24. Illumination device according to at least one of the preceding claims, **characterised in that** the electrical panel lamp modules (1; 1a, 1b, 1c) which are arranged modular in a row can be controlled individually.
25. Illumination device according to at least one of the preceding claims, **characterised in that** the contact elements (41, 42; 44, 45) have a number of contacts for the individual control and power supply of the individual electrical panel lamp modules (1; 1a, 1b, 1c) arranged in series which (number) corresponds to the number of electrical panel lamp modules (1; 1a, 1b, 1c) which are arranged in series.
26. Illumination device according to at least one of the preceding claims, **characterised in that** the contact elements (41, 42; 44, 45) have power supply contacts connected to the power supply module, and a control and/or data bus through which the electrical panel lamp modules (1; 1a1, 1b, 1c) arranged in series can be addressed and controlled individually.

27. Illumination device according to at least one of the preceding claims, **characterised by** an electrical switch (43) assigned to each panel lamp module (1; 1a, 1b, 1c) for individual activation of the panel lamp module (1; 1a1, 1b, 1c).
28. Illumination device according to at least one of the preceding claims, **characterised in that** the lamp frame (3) can be connected on the light-emitting front side (20) of the lamp housing (2) to an accessory frame (9) for holding a filter, shutter, colour foil or the like.
29. Illumination device according to claim 28, **characterised in that** the accessory frame (9) connected to the lamp frame (3) can be unfolded from the lamp frame (3).
30. Illumination device according to at least one of the preceding claims, **characterised in that** the lamp frame (3) can be connected to a holder (6) which holds the illumination device.
31. Illumination device according to claim 30, **characterised in that** the arms (31-34) of the lamp frame (3) preferably have in the middle a positive locking or force locking engagement element (37, 38) and that the holder consists of a supporting bracket (6) whose ends are provided with counter positive locking elements or counter force locking engagement elements (63).
32. Illumination device according to claim 31, **characterised in that** the supporting bracket (6) is adjustable in length.

33. Illumination device according to at least one of the preceding claims, **characterised in that** the rear wall (21) of the lamp housing (2) is provided with a socket and guide plate (5) in which a fixing element (8) can be inserted which can be connected to the panel lamp module (1; 1a, 1b, 1c).
34. Illumination device according to claim 33, **characterised in that** the socket and guide plate (5) has at least two guide rails (51, 52) which are arranged on either side of an insert opening (53) and that a locking element (15) is mounted on the rear wall (21) of the lamp housing (2) in the insert direction of the fixing element (8) in front of the insert opening (53).
35. Illumination device according to claim 34, **characterised in that** the locking element consists of a resilient pressure member (15).
36. Illumination device according to at least one of the preceding claims 33 to 35, **characterised in that** a handle (50) is formed on the side of the guide plate (5) opposite the insert opening (53).
37. Illumination device according to at least one of the preceding claims, **characterised by** the use of a flat discharge lamp as the panel lamp module (1; 1a, 1b, 1c).